

23. (New) An image forming apparatus according to claim 18, wherein said heat conducting member has a thermal conductivity larger than said envelope.

24. (New) An image forming apparatus according to claim 19, wherein said heat conducting member has a thermal conductivity larger than said envelope.

25. (New) An image forming apparatus according to claim 20, wherein said heat conducting member has a thermal conductivity larger than said envelope.

REMARKS

Claims 9-25 are presented for consideration, with Claims 9 and 10 being independent.

Editorial changes have been made to the specification and abstract.

In the claims, Claims 1-8 have been cancelled and replaced with Claims 9-25. Support for the new claims can be found beginning on page 5, line 15 of the specification.

Initially, Claims 1-8 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. This rejection is deemed to be moot in view of the cancellation of Claims 1-8. However, particular attention was paid to the grounds underlying this rejection in drafting Claims 9-25.

Claims 1-5 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Barbee '277. Claims 6-8 were rejected under 35 U.S.C. §103 as allegedly being obvious over Barbee. These rejections are deemed to be moot in view of the cancellation of Claims 1-8. Moreover, new Claims 9-25 are submitted to be patentable over the applied art.

Applicant's invention as set forth in Claim 9 relates to an image forming apparatus comprised of an envelope including first and second substrates disposed to form a clearance therebetween, and image forming means disposed between the first and second substrates and within the envelope. The image forming means includes an electron emitting device on the first substrate and an image forming member disposed on the second substrate, with the image forming member forming an image responsive to irradiation with an electron emitted from the electron emitting device. In addition, a heat insulating member is disposed on an outer surface of at least one of the first and second substrates except for a surface region on the image forming means.

Claim 10 relates to an image forming apparatus that includes an envelope and image forming means as recited in Claim 9. In addition, a heat insulating member is disposed on an outer surface of both the first and second substrates, except for a surface region on the image forming means.

In accordance with Applicant's claimed invention, uniform heat dissipation of the entire image forming means can be achieved.

The Barbee patent relates to a touch sensitive panel designed to be mounted on a CRT. In Barbee, a frame 20 and a bezel 70 sandwich a number of components, including a backing panel 60. The plate and bezel are glass-filled polycarbonate plastic, and the backing panel 60 is formed of an acrylic plastic and has a higher coefficient of thermal expansion than the frame and bezel.

Initially, it is respectfully submitted that since Barbee is directed only to a touch panel, it does not include image forming means disposed between the frame and bezel. Moreover, Barbee does not teach or suggest, among other features, a heat insulating member

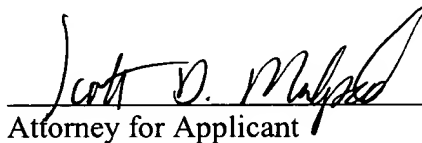
disposed on an outer surface of at least one of the first and second substrates except for a surface region on the image forming means.

Accordingly, it is submitted that independent Claims 9 and 10 are patentable. In addition, dependent Claims 11-25 set forth additional features of Applicant's invention. For example, Claims 13-20 set forth heat dissipation means and a heat conducting member. Independent consideration of the dependent claims is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO SPECIFICATION

The paragraph starting at page 1 line 28 and ending at page 2, line 5 has been amended as follows:

Also as shown in Fig. 23, in the publication of JP-A-08-055567, air blown from a fan 71 mounted on the back of a housing 72 is guided into the inside of the housing 72 along an image display panel 10 to the front side thereof, in order to cool the [whole of the] entire panel 10.

The paragraph starting at page 2, line 17 and ending at line 21 has been amended as follows:

It is another object of the present invention to provide an image forming apparatus having the structure capable of making uniform the distribution of temperature in the [whole of an] entire envelope (display panel) as much as possible.

The paragraph starting at page 5, line 22 and ending at line 26 has been amended as follows:

The image forming apparatus of this invention includes, for example, a liquid crystal display panel, a plasma display panel, an electron beam display panel, and the like. These image forming apparatus [has] have image forming means disposed in its envelope.

The paragraph starting at page 6, line 22 and ending at page 7, line 8 has been amended as follows:

Fig. 1 is a perspective view of an image forming apparatus according to the first configuration of an embodiment. In Fig. 1, reference numeral 2 represents a first substrate (hereinafter called a rear plate) mounted with electron emitting elements (not shown), and reference numeral [2] 1 represents a second substrate (hereinafter called a face plate) mounted with a light emitting member (not shown) on which an image is formed upon application of an electron beam emitted from an electron emitting element. The rear plate 2 and face plate 1 are disposed facing each other and fixed on a frame 3 by baking frit glass (not shown) to thereby form an envelope (hereinafter called an image display panel) 10.

The paragraph starting at page 8, line 6 and ending at line 21 has been amended as follows:

As the image display panel 10 is driven to display an image thereon by signals supplied from an external drive circuit (not shown), the image display panel generates heat. This heat is mostly generated in the image display area 11. The generated heat is dissipated from the surface of the image display panel 10. However, since the heat insulating members 4, 5 and 6 are mounted on the whole surface excepting the image display area 11 of the image display panel 10, most of the heat is dissipated from the image display area 11 on the surface of the image display panel. A portion of heat is conducted in the image display panel 10 so that the temperature of the

image display panel 10 excepting the image display area 11 rises. Therefore, in a steady state, the temperature of the image display panel 10 is made uniform.

The paragraph starting at page 8, line 22 and ending at page 9, line 17 has been amended as follows:

As the material of the image display panel, glass is generally used. Glass has a small thermal conductivity. A [length] distance of a heat flow in a direction perpendicular to the surface of the image display panel 10, i.e., a thickness of each of the face plate 1 and rear plate 2, is sufficiently shorter than a half of a [length] distance of a heat flow from the central area of the image display area 11 toward the peripheral area in a direction parallel to the surface of the image forming apparatus 10, i.e., a length of the image display panel 10 in the direction parallel to the surface thereof. Therefore, even if the heat insulating members are not mounted and heat is dissipated from the whole panel surface, most of the heat generated in the central area of the image display area 11 flows in the direction perpendicular to the surface of the image display panel 10. This means that a heat dissipation amount in the area excepting the image display area 11 hardly contributes to a heat dissipation amount in the central area of the image display area 11. Therefore, even if the surface excepting the image display area 11 is insulated from heat, the highest temperature of the image display panel 10 hardly changes.

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE ABSTRACT

The Abstract starting at page 38, line 2 and ending at line 8 has been amended
as follows:

An image forming apparatus [having] includes an envelope formed by first and
second substrates disposed at a predetermined distance therebetween and an image forming
[means] member disposed in the envelope[, wherein a]. A heat insulating member is disposed on
a surface of the envelope in an area excepting partial surface areas of the first and second
substrates.